III. REMARKS/ARGUMENTS

A. Status of the Claims

Claims 1-6, 8-17 and 19-37 are pending. Claims 1, 8 and 37 have been amended. No new matter is introduced by this amendment, and this amendment is fully supported by the specification. Applicants respectfully request reconsideration of the rejections of these claims for at least the following reasons.

B. Claim Rejections Under 35 U.S.C. § 102(e)

Claims 19, 23-24, 30-31 and 35 stand rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent Application Pub. No. US 2002/0099571 A1 to Waku *et al.* ("Waku"). Specifically, the Office Action asserts:

> Waku et al. '571 teaches a method of configuring a scan in an imaging device comprising data acquisition for a first patient (fig. 4) wherein basic patient information is input [172]. ... As shown in figures 5 and 6, there are multiple processes for each patient as well as multiple patients in the database. The system may execute medical works, such as the processes shown in figures 5 and 6, relating to a plurality of patients in parallel in a single apparatus [36]. Therefore it is interpreted that the patient identification step for a second patient may take place in parallel with the scan of a prior patient (figure 5). Before a patient is scanned, they go through the steps of patient identification, scanning, reconstruction, image processing etc. in the order they are provided. Additionally, a patient identification card is used to prevent a patient from being mistaken and is used to start the treatment, for example the imaging, or the patient [0187]. The database of all patients may be queried to determine the next patient, for example obtaining a list of patients for the entire radiation section or only one for one particular imaging system or the time the exam is scheduled (fig. 7). A filter may be used to limit the display to desired information [0109]. Information may be downloaded from a central or global database (fig. 16) and may also be entered locally, as previously described. Parameters for a scan are entered, such as the contrast medium desired [0141] and the plans for the scan, or scan protocol [0142]. A controller allows processes to be executed

automatically, including executing parallel processes, which allows the steps to be completed in a single action [0052].

Office Action, Pages 3-4 (emphasis added). Applicants respectfully disagree.

In their previous response, Applicants argued that Waku did not anticipate independent claims 19 and 30 because it only discloses a display of a list of patients, and a way to filter the display of patients. See Response Under 37 C.F.R. § 1.111, filed October 11, 2006 at 11-14. In response, the Office Action asserts:

> Regarding applicant's arguments with respect to independent claims 19 and 30[,] the disclosure of Waku et al. '571 teaches "filters" or *distinguishing* a stream for each operator, apparatus, process, image reader, examination room and the like [0099]. Waku et al. '571 teaches that the stream includes a plurality works that a global medical system may work [0012]. Therefore, in determining the next patient Waku et al. '571 does query or distinguish the stream or database and receive an identification of the next patient to be scanned based on at least one distinguishing criterion. Furthermore, Waku et al. '571 recites, patient information, examination order, past information, and the like can be collectively or individually obtained from a hospital/section/patient information system, such as HIS/RIS. Additionally, each of the following operations can be carried out in each apparatus on the network. Moreover, in each apparatus, the operation executed with respect to the stream is received by the receiver 203 as described in the above (2), and reflected in the existing stream or stream list [0120].

Office Action, page 2 (emphasis in original). Applicants continue to disagree with the Office Action's assessment of Waku.

The Office Action provides no basis for alleging that paragraph 99 of Waku, which discloses displaying the stream list that is "distinguished or filtered for each operator, apparatus, process, image reader, examination, and the like." Waku, ¶ 0099. Indeed, this passage discloses nothing more than applying a filter to a master list of, for example, patients. Simply applying a filter to a list is not the

same as the claimed method, which recites (1) specifying at least one criterion <u>for</u> <u>determining</u> a next patient to be scanned from a plurality of scheduled patients; (2) <u>querying</u> a database with the at least one criterion; and (3) <u>receiving</u> an identification of the next patient to be scanned based on the at least one criterion. Appl'n, claim 19 (emphasis added).[1] Simply put, Waku does not disclose that any query of a database is made; all Waku does is filter the data that is displayed to the user. Therefore, Applicants respectfully request that the rejection of independent claims 19 and 30 be withdrawn.

C.   Claim Rejections under 35 U.S.C. § 103(a)

1.   Claims 1-3, 8-14, and 36-37

Claims 1-3, 8-14, and 36-37 stand rejected as allegedly rendered obvious by U.S. Patent No. 5,623,927 to Damadian <u>et al.</u> ("Damadian") in view of U.S. Patent No. 5,525,905 to Mohapatra <u>et al.</u> ("Mohapatra"). Specifically, the Office Action asserts:

> Damadian et al. '927 teaches a system and method for improving patient throughput in an imaging device where patient handling time and scan protocol time are reduced in a multipatient imaging system by multiplexing the patient handling and the necessary scan protocol components where the patient handling of one patient is overlapped with the scan protocol of a second patient (abstract). Damadian et al. '927 also teaches a scan processing unit that controls the operation of the imaging device (col. 7, lines 28-35).

Office Action, Page 5. Thus, the Office Action contends that Damadian discloses all of the limitations of the claims, but admits that Damadian does not disclose "that the method comprises commanding the imaging device to determine a next patient to be scanned and verifying the identity of the patient arriving at the scanner and commanding the imaging device to begin a second scan." <u>Id.</u> at 5-6.

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[1] Independent claim 30 recites similar limitations.

In order to address this deficiency, the Office Action refers to Mohapatra, which allegedly discloses "a method of inputting patient identification and imaging data before the arrival of the patient to the scanner (col. 10, lines 36-39)." Id. at 6. Thus, the Office Action contends that:

> It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Damadian et al. '927 with [Mohapatra] et al. '905. Because both Damadian et al. '927 and [Mohapatra] et al. '905 teach improving patient throughput there would have been motivation to modify Damadian et al. '927 with [Mohapatra] et al. '905 to save time by inputting patient identification data before the patient arrives to the scanner, thereby improving the patient handling time. Furthermore, the system of Damadian et al. '927 in view of [Mohapatra] et al. '905 would be equally applicable to other imaging diagnostic apparatuses including X-ray, computed tomography, magnetic resonance, and nuclear medicine, which is known to include both PET and SPECT imaging systems.

Id. Applicants respectfully disagree, as the Office Action has failed to establish a prima facie case of obviousness.

In order to establish a prima facie case of obviousness, at least three criteria must be met. First, there must be some motivation or suggestion to make the proposed combination or modification of the references. Second, there must be a reasonable expectation of success. Finally, the combined or modified references must teach or suggest all claim limitations. See MPEP § 2142 et seq.

Even in light of KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727, 1742 (U.S. 2007), there must be a showing of a "teaching, suggestion or motivation" to make the proposed combination of references. Claim 1 recites:

> 1. A method of configuring a scan in an imaging device, the method comprising the steps of:
>
> completing a first data entry step including entering scan configuration data related to a first scan into a scan processing unit;

beginning a data acquisition step for the first scan;

during the data acquisition step for the first scan, completing a second data entry step relating to a second scan, the second data entry step including entering scan configuration data related to the second scan into the scan processing unit;

completing the data acquisition step for the first scan; and

beginning a data acquisition step for the second scan.

Appl'n, claim 1 (as amended).[2] The proposed combination of Damadian and Mohapatra does not disclose all of these steps. Specifically, Damadian addresses "the need to reduce the amount of time spent on" conducting a scan protocol (i.e., the time required to collect the spacially encoded magnetic resonance image data) and patient handing (i.e., preparation of the patient, loading the patient onto the patient handling system, placing the patient through the magnet aperture into the imaging volume, positioning the radio frequency coils onto or about the patient, attaching any ancillary equipment necessary for a particular patient or scan protocol, removing the patient following completion of the scan protocol, unloading the patient from the patient handling system, and preparing the scanner for the next patient). See Damadian, Col. 2, ll. 18-40. Importantly, "entering scan configuration data" into a scan processing unit is not disclosed as part of Damadian's "patient handling."

In that context, Damadian discloses one imaging system, such as a magnetic resonance device, that may have two to four apertures that provide access to the imaging volume. See Damadian, Col. 4, ll. 34-42; Figs. 1 and 2. Damadian also discloses providing at least two patient handling systems. Damadian, Col. 3, ll. 54-51 ("The present invention ... generally relates to scanning apparatuses and methods which employ multiple, i.e. at least two, patient handling systems, each

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[2] Independent claim 8 recites similar limitations.

one capable of positioning a patient in the imaging volume in preparation for a

magnetic resonance scan protocol."). With reference to Fig. 1, Damadian thus

discloses its method as follows:

> a method which comprises subjecting one patient (for example 8a) to
> the scan protocol time component of a magnetic resonance imaging
> procedure after positioning the patient in the imaging volume, and
> simultaneously preparing the second patient 8b, for the scan protocol
> time component of a second magnetic resonance imaging procedure.
> This overlapping of scan protocol and patient handling functions
> using two patient handling systems results in a significant
> enhancement of scanner utilization.
>
> Another method of the present invention is illustrated using the
> apparatus shown in FIG. 1. Here, each of two patients (8a, 8b), laying
> on their respective movable bed structure 7 of the patient handling
> systems 5, is translated through the aperture and positioned in the
> imaging volume in such a manner as necessary to perform an MR
> scan protocol of the head region of both patients simultaneously. In
> general, proper positioning involves placing the anatomical region of
> interest of each patient at a particular location in the primary magnetic
> field imaging volume 3 and having the radio frequency antennas 4,
> positioned in close proximity to the patient's anatomical region of
> interest.
>
>   *   *   *
>
> Positioned inside the primary magnet and proximate the imaging
> volume 3 are the radio frequency antennas 4 whose radiation pattern
> extends over a portion of the imaging volume large enough to cover
> the head region of two patients (8a, 8b). The head region of each
> patient is positioned in opposite ends of the receiver coil structure, at
> which point the MR scan protocol may proceed.

Damadian, Col. 4, l. 47 - col. 5, l. 28 (emphasis added). Although Damadian refers

to "simultaneously preparing the second patient," this appears to be referring to the

physical preparation of the patient, such as positioning the patient, and not entering

scan configuration data related to the second patient's scan. Thus, Damadian does

not disclose the claimed step of "during the data acquisition step for the first scan, completing a second data entry step relating to a second scan, the second data entry step including entering scan configuration data related to the second scan into the scan processing unit."

Mohapatra does not cure this deficiency. Mohapatra discloses "a moveable object (e.g., a patient) handling system for use in diagnostic medical imaging" that overcomes the drawbacks of dedicated systems. As illustrated in Fig. 1, the moveable object handling system B includes "a base 24 and a table 26 ... disposed on the base for supporting the object." Mohapatra, Col. 6, ll. 40-42. The system further includes wheels and a locking means for locking the wheels against rolling. Id. at Col. 6, ll. 42-46.

The portion cited by the Office Action, however refers to the use of such a system in an ambulance:

> The above object handling system applications are described in
> conjunction with diagnostic imaging environments. However, the
> above described object handling system also finds application as a
> collapsible object handling system for use in a vehicle such as a truck
> or an ambulance. In this discussion the object handling system is used
> to support a patient in an ambulance, however, it is to be appreciated
> that use of the object handling system in other vehicles or with
> objects, other than patients, is contemplated. When used in an
> ambulance, the height adjustment means 42 lowers the table, as
> illustrated in FIG. 4, so that the object handling system B, with a
> patient disposed thereon, can be loaded into and transported in the
> ambulance. During transportation, at least one of patient
> identification data and imaging data are entered into the object
> handling computer 34 via the second data entry means 36. When the
> ambulance arrives at a hospital, clinic or other such facility, the object
> handling system B and patient are unloaded from the ambulance and
> the height adjustment means 42 raises the object handling system to a
> convenient height for movement thereof into the facility. The facility
> has a first connector 18 connected to a hospital computer, used to

record information about patients such as admission time, insurance carrier, treatment, and the like. The first connector 18 is not rigidly attached to a housing but rather is at the end of a flexible harness 20 to allow the first connector 14 and second connector 28 to be joined without having to orient the object handling system in a specific direction. Once the first connector 18 and second connector 32 are joined, the object handling computer 34 transfers patient identification data to the hospital computer thereby speeding up the patient admittance cycle. When the patient is ready to be imaged, the object handling system B is docked to the imaging equipment and at least one of the patient identification data and imaging data are transferred from the object handling computer 34 to the imaging computer 12 for use in the production of images by the imaging equipment associated with the imaging computer. An advantage of using the object handling system B in this manner is that during transportation, patient identification data and/or imaging data is entered into the object handling computer 34 thereby enhancing the efficiency of admission to the hospital.

Id. at Col. 10, ll. 24-65 (emphasis added). Although imaging data may be entered into the object handling computer before the patient arrives at the imaging device, this data is not transferred to the scan processing unit until "[w]hen the patient is ready to be imaged." Id. at Col. 10, l. 55. Thus, Mohapatra does not disclose the claimed step of "during the data acquisition step for the first scan, completing a second data entry step relating to a second scan, the second data entry step including entering scan configuration data related to the second scan into the scan processing unit."

Because the proposed combination of Damadian and Mohapatra does not disclose all elements of the claimed invention, Applicants respectfully request that the rejection of this claim, and all claims dependent thereon, be withdrawn.

2.   Claims 4-6 and 15-17

Claims 4-6 and 15-17 stand rejected as allegedly rendered obvious by

Damadian in view of Mohapatra as applied to claims 1, 3, and 8, and further in

view of Waku. Specifically, the Office Action asserts:

> Damadian et al. '927 in view of [Mohapatra] et al. '905 teaches all the
> limitations of the claimed invention except for expressly teaching that
> the method further comprises the step of specifying at least one
> criterion for determining a next patient to be scanned. Damadian et al.
> '927 in view of [Mohapatra] et al. '905 also do not expressly teach
> downloading information from a central database and receiving data
> entered at the site where the scan takes place that data comprising
> radioactive tracer information.
>
> In the same field of endeavor, Waku et al. '571 teaches specifying at
> least one criterion for determining a next patient to be scanned [0173].
> Waku et al. '571 also teaches downloading patient information from a
> centralized server, as well as entered locally at the imaging device
> [0084; 0135]. Waku et al. '571 also teaches data entered locally
> comprises radioactive tracer information [141].
>
> It would have been obvious to one of ordinary skill in the art at the
> time of the invention to modify Damadian et al. '927 in view of
> [Mohapatra] et al. '905 with Waku et al. '571. The motivation to
> modify Damadian et al. '927 in view of [Mohapatra] et al. '905 with
> Waku et al. '571 would have been to prevent the operator
> misidentification of the patient as well as, reducing the burden of data
> input of patient information into the apparatus, as taught by Waku et
> al. '571 [0187].

Office Action, pages 6-7. Applicants respectfully disagree.

"If an independent claim is nonobvious under 35 U.S.C. § 103, then any

claim depending therefrom is nonobvious." MPEP, citing In re Fine, 837 F.2d

1071, 5 USPQ2d 1596 (Fed. Cir. 1988). As discussed above, independent claims 1

and 8 are nonobvious and do not disclose the claimed step of "during the data

acquisition step for the first scan, completing a second data entry step relating to a

second scan, the second data entry step including entering scan configuration data related to the second scan into the scan processing unit." Waku does not cure the deficiency. Therefore, Applicants respectfully request that the rejection of claims 4-6 and 15-17, dependent on independent claims 1 and 8, respectfully, be withdrawn.

3. Claims 20 and 32

Claims 20 and 32 stand rejected as allegedly rendered obvious by Waku in view of U.S. Patent No. 6,505,064 to Liu et al. ("Liu"). Specifically, the Office Action asserts:

> Waku et al. '571 teaches all the limitations of the claimed invention except for expressly teaching that the at least one criterion comprises a tracer injection time.

> Liu et al. '064 teaches a diagnostic imaging system using a contrast agent and further discloses that time course information such as blood flow rate, contrast agent propagation, and contrast agent peak arrival time, is logged in a database which provides additional diagnostic information or timing information for future reference (abstract).

> It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waku et al. '571 with Liu et al. '571. The motivation to modify Waku et al. '571 with Liu et al. '571 would have been to include contrast timing information to the database disclosed by Waku et al. '571 to provide timing information, as disclosed by Liu et al. '571.

Office Action, pages 7-8. Applicants respectfully disagree.

As discussed above, independent claims 19 and 30 are patentable and do not disclose the elements of claim 1 because it only discloses filtering data in a stream. Liu does not cure the deficiency with that reference. Therefore, Applicants respectfully request that the rejection of claims 20 and 32, dependent on independent claims 19 and 30, respectfully, be withdrawn.

4.   Claims 21 and 33

Claims 21 and 33 stand rejected as allegedly rendered obvious by Waku in view of U.S. Patent Application Pub. No. US 2004/0073453 A1 to Nenov et al. ("Nenov"). Specifically, the Office Action asserts:

> Waku et al. '571 teaches all the limitations of the claimed invention except for expressly teaching that the criterion comprises patient arrival time.
>
> In the same field of endeavor, Navov et al. '453 teaches a hospital data management system and further discloses that clinical management data may include patient's arrival time such that the physician may be updated to the status of the patient and arrange his or her schedule accordingly [0065].
>
> It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waku et al. '571 with Navov et al. '453. The motivation to modify Waku et al. '571 with Navov et al. '453 would have been to include arrival time to the database disclosed by Waku et al. '571 such that the list of patients is up to date as to which patients have actually arrived to reduce time physicians and imaging technicians are waiting for late patients.

Office Action, page 8. Applicants respectfully disagree.

As discussed above, independent claims 19 and 30 are patentable and do not disclose the elements of claim 1 because it only discloses filtering data in a stream. Nenov does not cure the deficiency with that reference. Therefore, Applicants respectfully request that the rejection of claims 20 and 32, dependent on independent claims 19 and 30, respectfully, be withdrawn.

5.   Claims 22 and 34

Claims 21 and 33 stand rejected as allegedly rendered obvious by Waku in view of U.S. Patent Application Pub. No. US 2003/0093296 A1 to Lee et al. ("Lee"). Specifically, the Office Action asserts:

Waku et al. '571 teaches all the limitations of the claimed invention except for expressly teaching that the criterion comprises patient registration time.

Lee et al. '296 teaches a model of general hospital tasks that are monitored by a hospital information system including registration of a patient allowing integration between the order communication system and the information management system [0109].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waku et al. '571 with Lee et al. '296. The motivation to modify Waku et al. '571 with Lee et al. '296 would have been ensure that the database disclosed by Waku et al. '571 is up to date as to which patients have been registered to allow the status of the patient to be monitored and available for determining order for imaging of the pending patients, thus Providing improved patient flow.

Office Action, page 9. Applicants respectfully disagree.

As discussed above, independent claims 19 and 30 are patentable and do not disclose the elements of claim 1 because it only discloses filtering data in a stream. Lee does not cure the deficiency with that reference. Therefore, Applicants respectfully request that the rejection of claims 20 and 32, dependent on independent claims 19 and 30, respectfully, be withdrawn.

> 6.   Claims 25-29

Claims 25-29 stand rejected as allegedly rendered obvious by Waku in view of Damadian and Mohapatra. Specifically, the Office Action asserts:

Waku et al. '571 teaches all the limitations of the claimed invention including downloading information from a central database and entering data locally at a site where the scan takes place [0084; 0135]. Waku et al. '571 also teaches entering contrast agent information [0141]. Waku et al. '571 also teaches querying the data base with one action (fig. 7) and commanding the imaging device in the second scan with a second action [0051; 0084]. Waku et al. '571 does not expressly teach entering a scan protocol that further comprises,

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conducting a data acquisition step for a first scan, the data entry step including entering scan configuration data related to the second scan into a scan processing unit during the data acquisition step for the first scan. Damadian et al. '927 teaches a method of improving patient throughput in an imaging device where patient handling time and scan protocol time are reduced in a multipatient imaging system by multiplexing the patient handling and the necessary scan protocol components where the patient handling of one patient is overlapped with the scan protocol of a second patient (abstract).

Damadian et al. '927 does not expressly teach entering scan information during the acquisition of the first scan.

[Mohapatra] et al. '905 teaches a method of inputting patient identification and scan protocol data before the arrival of the patient to the scanner (col. 10, lines 36-39).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Waku et al. '571 with Damadian et al. '927 and [Mohapatra] et al. '905. Because Waku et al. '571 teaches improving patient throughput there would have been motivation to modify Waku et al. '571 with Damadian et al. '927 and [Mohapatra] et al. '905 to further improve the patient throughput by inputting patient identification data before the patient arrives to the scanner by entering data during the first scan.

Office Action, pages 9-10. Applicants respectfully disagree.

As discussed above, independent claims 19 and 30 are patentable and do not disclose the elements of claim 1 because it only discloses filtering data in a stream. Neither Damadian nor Mohapatra cures the deficiency with that reference. Therefore, Applicants respectfully request that the rejection of claims 20 and 32, dependent on independent claims 19 and 30, respectfully, be withdrawn.
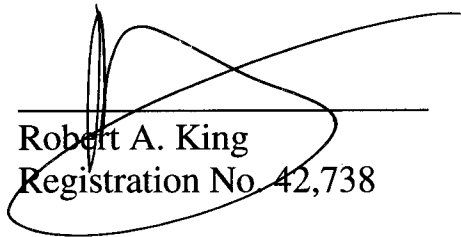
IV. CONCLUSION

Applicants respectfully submit that the application is in condition for allowance. Applicants believe that no fees are necessary in connection with the filing of this document. In the event any fees are necessary, please charge such

fees, including fees for any extensions of time, to the undersigned's Deposit

Account No. 50-0206. Should any outstanding issues remain, the Examiner is

invited to telephone the undersigned at the number listed below.

Respectfully submitted,
HUNTON & WILLIAMS LLP

Dated: August 8, 2007   By: _____

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